

PANEL 4A -- GOVERNMENT DECISION SUPPORT CAPABILITIES AND SERVICES

Moderator: Ms. Shelley J. Row, Department of Transportation, Federal Highway Administration (DOT/FHWA)

Rapporteurs: Dr. Wayne Estabrooks, Department of Defense, United States Navy
Mr. Floyd Hauth, OFCM (STC)

Panelists: Mr. Louis Lombardo, National Highway Traffic Safety Administration (NHTSA)
Mr. Paul Pisano, Department of Transportation, Federal Highway Administration (DOT/FHWA)
Mr. Richard Wagoner, National Center for Atmospheric Research (NCAR)
Mr. Edward Brigham, Department of Transportation, Research and Special Programs Administration (DOT/RSPA)
Mr. Jack Requa, Washington Metropolitan Area Transit Authority (WMATA)
Mr. Emil Wolanin, Montgomery County Advanced Traffic Management System (ATMS)

Objective: Provide the basis for developing or refining weather information for future operational decision support capabilities and services.

Synopsis

National Highway Traffic Safety Administration (NHTSA)

Mr. Lombardo's presentation focused on statistics from NHTSA's 1998 database. In the United States each year, adverse weather and road conditions contribute to substantial economic and human losses from crashes, injuries, and death. Each year, on average, more than 1 million crashes occur under adverse weather-related roadway conditions. Approximately 800,000 people are injured and about 7,000 are killed. The estimated economic losses amount to nearly \$42 billion. These analyses are based on the statistical crash data files of the National Highway Traffic Safety Administration (NHTSA). The data were derived from NHTSA's two major crash data files: Fatality Analysis Reporting System (FARS) and National Automotive Sampling System (NASS). These data include the relative frequency of crashes, injuries, fatalities, and economic losses under conditions of rain, snow/sleet, fog, and normal weather. In addition, statistics are available on adverse weather-related road conditions, such as roadway surface wetness, snow, and ice; as well as vision obscuration by splash, spray, and dust.

Federal Highway Administration

Mr. Pisano is the Weather and Winter Mobility Coordinator within the Office of Transportation Operations, Federal Highway Administration. He began by stating that weather is a significant threat to surface transportation system performance. Surface transportation decision-makers do not receive the same level of products and services as aviation and maritime interests. There are immense opportunities to be exploited in integrating land, sea, and atmospheric data with new technologies to serve current and future transportation systems. The FHWA vision is to improve surface transportation through advanced decision-support applications, open environmental information systems, developing a national highway *info structure*, and establishing a dedicated surface transportation weather research program. Preliminary interface requirements include performance measuring, observation standards, public and private sector collaboration, and expansion and enhancement of current observation systems.

Over the next decade, major changes are expected in surface transportation. Changes will include new sensors as well as greatly expanded communications and computer capabilities. These changes will allow new operations decision paradigms at a modest cost because of the competitive market. End-users of future transportation systems will be the beneficiaries of the changes and improvements. Partnerships will be increasingly important as the public and private sectors interact and collaborate. The federal role will be to provide leadership and facilitate delivery of core services and to manage core research and development. The private sector will need to tailor information for decision-support systems and provide value-added products and services. State DOTs will need to govern the direction and focus of core and value-added services as well as provide priorities for research. Research and development organizations must ensure that there will be free and open access to the results of their programs and activities.

Research and Special Programs Administration

Mr. Brigham is the Acting Associate Administrator for Innovation, Research, and Education, Research and Special Programs Administration (RSPA), Department of Transportation (DOT). RSPA is responsible for multi-modal transportation research and technology development and innovation. A key element of that research and innovation is expanding and improving the weather information available to the transportation system as a whole. In addition, RSPA also contains the Office of Emergency Transportation, which coordinates and manages DOT's response to natural disasters and national emergencies. Enhanced weather information is a significant contributor to saving lives and property and to speeding recovery from such events. These benefits will come with a substantial price tag--such costs need to be recognized and plans made accordingly.

A major current activity of RSPA is participation in a National Science and Technology Council-sponsored partnership supporting a 12-month demonstration of the Integrated Terminal Weather System (ITWS). Originally conceived as an aviation-

related system, the ITWS is a high-resolution “nowcasting” system that will provide weather information to the transportation system and state and local governments, including wind shear/microburst, wind, snow and ice, lightning, tornado, and fog forecasts. This system and the information it provides ultimately will enhance transportation safety and improve the quality of transportation advisories, traffic control, and infrastructure management.

Washington Metropolitan Area Transit Authority

Mr. Requa is Chief Operating Officer for Bus Services with the Washington Metropolitan Area Transit Authority (WMATA). WMATA is the major transit provider in the Washington, DC area. *Metro* operates 762 rail cars and 1,443 buses covering a service area of 1,500 square miles with a daily rider ship of 1.1 million people. Extended cold, snow, and ice conditions take its toll on employees and equipment. Weather reports assist the management in allocating operating staff, deciding on the best level of service that can be supported, and requiring additional support staff and services for plowing, assignment of wreckers, etc. The more accurate and location-specific the weather information is the better WMATA can respond to meet the service needs of its customers.

Montgomery County Advanced Traffic Management System

Mr. Wolanin is Section Chief of Montgomery County's Advanced Traffic Management System. Montgomery County operates a sophisticated transportation management system. Weather impacts the transportation system on a daily basis, which contribute to roadway congestion, transit delays, safety, and deployment of agency resources. Primarily, most transportation agencies require accurate weather information to prepare for and “battle” winter weather events. These agencies actively manage and operate their transportation system using Intelligent Transportation System (ITS) technologies that require specific, real-time weather information.

The County's area transportation management system is built upon the concepts set forth in the National ITS Architecture. Therefore, it is critical that weather data are provided and integrated in formats consistent with these systems' design and fabrication. Transportation management agencies do not desire standalone products, but rather data streams that can be easily overlaid and configured into existing workstations. The weather community is encouraged to work towards the framework of the National ITS Architecture and associated ITS standards to ensure weather data can be used as a decision support tool for transportation management.

Follow-up Discussion

The key point from the discussion period emphasized the need for more effective customer and provider interaction. Although WMATA and Montgomery County's ATMS are in the Washington Metropolitan area and in close proximity to the National Weather Service Headquarters, both organizations purchase services and shop for

information from television. Both transportation organizations indicated they were not particularly happy with the services and information they are currently receiving.

One approach to improving weather support to surface transportation stressed that the meteorological community needs to make every effort to understand the customer's business better than they know their own operation. They need to determine and understand what the customer is trying to do and where weather fits into the operations. Next, meteorologists need to marry their weather technology, capabilities, and services to the customer's operations. Only by so doing will the meteorological community earn their money.

On the other side, the customer has the responsibility to articulate what it is they are trying to do and where they think weather is a critical factor to their operation. The customer also needs to define clearly what success is and, then, communicate this definition to the service provider. Lastly, the meteorologist needs to be careful not to oversell and, in so doing, promise to deliver more than the current weather technology will allow him to do.

Links to Presentations:

Mr. Louis Lombardo, NHTSA

www.ofcm.gov/WistII/Presentations/Day2/5_Panel4A/2_Lombardo.ppt

Mr. Paul Pisano, DOT/FHWA

www.ofcm.gov/WistII/Presentations/Day2/5_Panel4A/3_Pisano.ppt

Mr. Richard Wagoner, NCAR

www.ofcm.gov/WistII/Presentations/Day2/5_Panel4A/4_Wagoner.ppt